

REMARKS/ARGUMENTS

New Claims 25-33 are added.

The claims now in the application are 11 and 14-33.

Claims 11 and 14 are amended to clarify them. The typographical error “art” is replaced by “part.” “Particle” is pluralized to “particles” as is obviously intended. “Contains” is changed to “comprises” as more conventional language and the idiomatically more correct article “the” replaces “a” where appropriate.

In addition, “polymer having no functional group” is replaced with “polyolefinic resin which is uncrosslinked or crosslinked.” Basis appears at page 8, lines 21 and 22; page 9, lines 23 and 24; and page 10, lines 2 and 3.

In Claim 14 antecedent basis for “water-insoluble matrix” is supplied. The wording of the claim is rearranged somewhat to clarify it.

New Claims 25 and 26 limit Claims 11 and 14 respectively by specifying that the matrix or cross-linkable composition “consists essentially” of the recited components as is obviously the case for the claimed subject matter. Note the reference to the ethylene vinyl-acetate components and “the other component” throughout the specification, see for instance the paragraph at page 8, line 14.

Claim 27 finds basis at page 37, in the paragraph at line 19 and in the paragraph bridging pages 38 and 39.

Claims 28 and 29 find basis in e.g. Example 1-3, page 49 over to page 50.

Claims 30 and 31, dependent on Claims 11 and 14 respectively, recite positively that the respective matrix compositions do not contain water-insoluble substances with the specified functional groups. This excludes the optional materials specifically disclosed in the paragraph at page 10, line 7 “and the like.”

Claims 32 and 33, dependent on Claims 31 and 14 respectively, recite that the polyolefinic resin component is uncrosslinked. Basis occurs in the paragraph at page 18, line 2, please see lines 13 and 14 thereof and in the paragraph bridging pages 19 and 20.

THE DETAILED ACTION

THE ELECTION/RESTRICTION

The election holding is noted.

New Claims 27 and 28 are drawn to the species compositions elected for search purposes. All the new claims are readable thereon.

Claim Rejections - 35 U.S.C. § 112

Reconsideration and withdrawal of the rejection of Claims 11 and 14 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention are requested.

The word “art” in Claim 11, line 1 is changed to “part,” as was obviously intended.

The indefinite article “a” in “a content”, etc., is changed to the definite article “the.”

The language “a polymer having no functional group” (Claims 11 and 14) is changed to “a polyolefinic resin which is uncrosslinked or crosslinked” which does not include the ethylene vinyl acetate copolymer entity. Basis is pointed out above.

In Claim 14, since “polymer having no functional group” no longer appears, the question as to it is moot.

In Claim 14 the indefinite article “a” in the quoted expression “a material to be ...” is changed to “the.” Also antecedent basis now appears in the claim.

Claim Rejections - 35 U.S.C. § 103

Reconsideration and withdrawal of the rejection of Claims 11 and 14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. 6,645,264 (Hasegawa et al.) are requested.

The rejection indicated that:

Hasegawa et al disclose a composition for forming a polishing pad comprising A) a crosslinkable elastomer having no carboxyl, amino, hydroxyl, epoxy, sulfonic acid and phosphoric acid groups B) a water-insoluble substance and C) a water-soluble particulate substance. Suitable crosslinkable elastomers include ethylene vinyl acetate copolymer as well as other polymers having no functional groups, e.g., ethylene-propylene rubber. These crosslinkable elastomers may be used in combination (column 3, lines 11-19).

The Official Action acknowledges that:

the disclosure of the reference differs from the present claims is not expressly exemplifying a combination of ethylene vinyl acetate polymer with another polymer having no functional group as the crosslinkable elastomer component.

but argues that

It is prima facie obvious to combine two materials each of which is taught by the prior art to be useful for the same purpose in order to form a third composition which is to be used for the very same purpose.

However the above rationale for the rejection omits an essential feature of the Hasegawa et al. invention which is that the “B) a water insoluble substance” be one having a functional group. More precisely, Hasegawa et al. disclose in the paragraphs at col. 1, lines 47 and 48:

The present invention will now be explained in detail.

1. A composition for forming a polishing pad comprising [A] a crosslinkable elastomer having no carboxyl, amino, hydroxyl, epoxy, sulfonic acid and phosphoric acid groups and [B] a water-insoluble substance having at least one functional group selected from the group consisting of carboxyl, amino, hydroxyl, epoxy, sulfonic acid and phosphoric acid groups.

The claims as presently amended make it clear that the claimed invention distinguishes from Hasegawa et al.

The polishing pad of the present application is characterized in that (1) a water-insoluble substance having at least one functional group selected from the group consisting of carboxyl, amino, hydroxyl, epoxy, sulfonic acid and phosphoric acid groups is not contained, (2) the crosslinked polymer is specifically ethylene-vinyl-acetate copolymer, and (3) crosslinked 1,2-polybutadiene is not contained.

On the other hand, an invention of Hasegawa et al.'s reference is significantly characterized in that a polishing pad comprises a water-insoluble substance having at least one functional group selected from the group consisting of carboxyl, amino, hydroxyl, epoxy, sulfonic acid and phosphoric acid groups. Concretely, in Example 1 polybutadiene with hydroxyl groups at both ends, in Example 2, a copolymer of butadiene/acrylonitrile/methacrylic acid/2-hydroxybutyl methacrylate/ethyleneglycol dimethacrylate/divinylbenzene and in Example 3 polybutadiene with hydroxyl groups at both ends are components, respectively.

The point that a polishing pad of the present application is aiming at and a point that the inventions of the references cited are aiming at are quite different, because the polishing pad of the present application doesn't comprise a water-insoluble substance which is polybutadiene with hydroxyl groups at both ends or, more generally, one having at least one functional group selected from the group consisting of carboxyl, amino, hydroxyl, epoxy, sulfonic acid and phosphoric acid groups.

And in Hasegawa et al.'s reference, the unique constituent features of the present invention: (2) the crosslinked polymer is ethylene-vinyl-acetate copolymer, and (3) crosslinked 1,2-polybutadiene is not a component are not concretely described and suggested. That is to say, in Example 1, 1,2-polybutadiene and polybutadiene with hydroxyl groups at

both ends are used and a polishing pad crosslinked by an organic peroxide is disclosed. In Example 1, the crosslinking polymer is 1,2-polybutadiene and polybutadiene with hydroxyl groups at both ends.

In Example 2, a polishing pad crosslinked by organic peroxide using a copolymer of butadiene/acrylonitrile/methacrylic acid/2-hydroxybutyl methacrylate/ethyleneglycol dimethacrylate/divinylbenzene 1,2-polybutadiene and polybutadiene rubber is disclosed. In Example 2, the crosslinking polymer is a copolymer of butadiene/acrylonitrile/methacrylic acid/2-hydroxybutyl methacrylate/ethyleneglycol dimethacrylate/divinylbenzene and 1,2-polybutadiene and polybutadiene rubber.

In Example 3, a polishing pad crosslinked by organic peroxide using 1,2-polybutadiene and polybutadiene with hydroxyl groups at both ends is disclosed. In Example 3, a crosslinking polymer is 1,2-polybutadiene and polybutadiene with hydroxyl groups at both ends.

As mentioned above, the technical idea disclosed concretely in Hasegawa et al.'s reference is that a polymer crosslinked in a polishing pad is 1,2-polybutadiene and that a polishing pad has to contain a crosslinked 1,2-polybutadiene.

Therefore, in Hasegawa et al.'s reference, anything about the unique constituent features of the present invention: (2) the crosslinked polymer is ethylene-vinyl-acetate copolymer, and (3) crosslinked 1,2-polybutadiene is not contained are not concretely described and suggested. From this point, a polishing pad in Claims 11 and 14 of the present application is quite different from the technical idea disclosed in Hasegawa et al.'s reference.

And also in a general description of Hasegawa et al.'s reference, many kinds of polymers are described as a crosslinked elastomer (column 3, lines 11-19) and it needs a large amount of trial and error to choose ethylene-vinyl-acetate copolymer from the said polymers

for combination with another one thereof, particularly when component [B] is omitted. The combination would be accidental.

The idea that a composition for a polishing pad that is excellent in formability, abrasion resistance and small in temperature dependence is provided when crosslinked ethylene-vinyl-acetate copolymer is 10% by weight or more based on 100% by weight of the total of said water-insoluble matrix is used is neither described nor suggested by Hasegawa et al.

In summary Hasegawa et al. teach away from the present invention in that they require the presence of a component "B" with specified functional groups, which Applicants' claims do not specify, and their preferred components "[A]" is 1,2-polybutadiene.

Applicants employ for their matrix component at least 10% ethylene-vinyl-acetate polymer and do not employ 1,2-polybutadiene.

New Claims 25-33, being more specific, are even further removed from the reference.

Favorable action is solicited.

Respectfully submitted,

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